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TITLE: METHOD FOR BIOLOGICALLY REMOVING NITROGEN

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ABSTRACT:

PURPOSE: To safely and economically feed only the required amt. of gaseous hydrogen into raw water, to improve environment in which hydrogen-oxidizing bacteria are grown and to keep the concn. of the bacteria high in a reaction system for the raw water by feeding gaseous hydrogen into the raw water through gas permeable membranes and propagating the bacteria on the outer surfaces of the membranes at the raw water side.

CONSTITUTION: Raw drinking water contg. oxidized nitrogen flows in a reactor

6 through a raw water feeding line 1. The reactor 6 houses a gas permeable membrane module 7 formed by bundling many gas permeable hollow fiber membranes in a vertical tube shape. Gaseous hydrogen is fed into the module 7 from the bottom through a hydrogen feeding line 3 and the hydrogen passed through the membranes is fed into the raw water in the reactor 6. Since hydrogen-oxidizing bacteria are grown on the outer surfaces of the membranes which feed hydrogen as a substrate necessary for the bacteria, the slowly propagating bacteria can be put in the optimum environment and the concn. of the bacteria can be kept high. Gaseous hydrogen can economically and safely be fed by utilizing the gas permeable membranes.

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